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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,005	01/28/2002	Shuichi Karino	8013-1002	2094
466	7590	11/15/2005	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			DYKE, KERRI M	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/056,005

Applicant(s)

KARINO ET AL.

Examiner

Kerri M. Dyke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-92 is/are rejected.
- 7) ☒ Claim(s) 23, 28 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/24/02 7/1/03 12/13/04 9/25/03 3/27/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement filed December 13, 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Objections***

3. Claims 23, 28, and 33 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 23, 28, and 33 include limitations for a primary and secondary router. Base claims 22, 27, and 32 include limitations for a normally selected and associated router. The normally selected router is the primary router and the associated router is the secondary router. Therefore, claims 23, 28, and 33 add no further limitations to the base claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-4, 6-8, 10-11, 13-15, 17-18, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485, provided by applicant) in view of Fowler (US 5,793,978, provided by the applicant).

6. In regards to claims 1, 8, and 15, Sauer et al. disclose a communication network comprising: a host network; a plurality of base stations; at least a mobile host capable of establishing links to said base stations (Figure 5); and multiple-point routings between said base stations and said host network, and said routers including at least a page-area managing router for managing at least a page a hierarchy-network of plural routers providing area for recording said mobile host (Page 8 line 18), wherein said page-area managing router limits, within a predetermined number, the number of transfer-acceptable packets in packets received in a predetermined managing router transfers only said ordinate routers managed by said time period (page 6 line 10). Sauer et al. does not disclose so that said page-area transfer-acceptable packets to sub- page-area managing router, and said Page-area managing router does not transfer exceeding transfer-requested packets received additionally to said transfer-acceptable packets in said predetermined time period.

Fowler discloses a system for routing packets by separating packets in to broadcast and nonbroadcast packets and limiting the resources for the broadcast packets (column 1 lines 41-44).

It would have been obvious to one of ordinary skill in the art to add the packet limiting feature of Fowler to the communication network of Sauer et al. in order to conserve resources as taught by Fowler in column 1 lines 37-39.

7. In regards to claims 3, 10, and 17, Sauer et al. and Fowler disclose the inventions of claims 1, 8, and 15 wherein said page-area managing router is capable of optionally setting said predetermined number for said transfer-acceptable packets (column 1 lines 52-55).

8. In regards to claims 4, 11, and 18, Sauer et al. and Fowler disclose the inventions of claims 3, 10, and 17 wherein said predetermined number is a natural number. The number inherently is a natural number. The limit cannot be a fraction of bit, because a fraction of a bit cannot be made. Even if the limit is set to a fraction of a byte, it translates into an integer amount of bits.

9. In regards to claims 6-7, 13-14, and 20-21, Sauer et al. and Fowler disclose the inventions of claims 1, 8, and 15 wherein said page-area managing router transmits, through said host network to a caller a second packet-transmission suppression request which requests said caller to widen a time interval of discontinuous transmission of said packets. Fowler also teaches wherein said page-area managing router transmits, through said host network to a caller, a second packet-transmission suppression request which request said caller to stop transmission of said packet until said predetermined time period has passed, and re-start said packet transmission thereafter. These are windowing functions, which are inherent in TCP/IP protocol.

10. Claims 2, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485) in view of Fowler (US 5,793,978) further in view of RFC 793.

11. In regards to claims 2, 9, and 16, Sauer et al. and Fowler disclose the inventions of claims 1, 8, and 15 but not wherein said page-area managing router discards said exceeding transfer-requested packets.

RFC 793 discloses discarding exceeding packets on page 41.

It would have been obvious to one of ordinary skill in the art to discard excess packets, as taught by RFC 793 in the communication system of Sauer et al. and Fowler because TCP is a reliable transmission system capable of supporting a continuous exchange of data, as taught on page 3. TCP is also the accepted and de facto standard for packet transmission, especially through the Internet.

12. Claims 5, 12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485) in view of Fowler (US 5,793,978) further in view of Allen, Jr. et al. (US 6,169,735).

13. In regards to claims 5, 12, and 19, Sauer et al. and Fowler disclose the inventions of claims 1, 8, and 15, but not wherein said page-area managing router is capable of optionally setting said predetermined time period.

14. Allen, Jr. et al. discloses setting the time period in column 10 lines 51-53.

15. It would have been obvious to one of ordinary skill in the art to allow the time period to be optionally set, as taught by Allen, Jr. et al. within the communication system of Sauer et al.

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and Fowler et al. because allowing the operator the ability to set the time period gives the operator control over bandwidth efficiency as taught by Allen, Jr. et al. in column 10 lines 50-58.

16. Claims 22-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485) in view of Srikanth (EP 1,011,231, provided by the applicant).

17. In regards to claims 22, 27, and 32, Sauer et al. discloses a communication network comprising: a host network; a plurality of base stations; at least a mobile host capable of establishing links to said base stations; and a hierarchy-network of plural router-sets providing multiple point routings between said base stations and said host network (Figure 5). Sauer et al. does not disclose wherein each of said router-sets further includes plural associated routers which provide the same communication route and which have the same routing informations, and normally selected one of said associated routers in each router set is operational to provide said communication route, and if said normally selected one of said associated routers becomes trouble or inoperational, then other of said associated routers is alternatively selected to be operational to provide said communication route, thereby allowing continuous communication between said at least mobile host and said host network.

Srikanth discloses a redundant routing system in column 2 line 57 – column 3 line 11.

It would have been obvious to one of ordinary skill in the art to use a backup routing system, as taught by Srikanth in the communication network taught by Sauer et al. because a redundant routing system prevents a single point of failure from harming the network, as explained by Srikanth in columns 1 and 2.

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18. In regards to claims 23, 28, and 33, Sauer et al. and Srikanth disclose the inventions of claims 22, 27, and 32 wherein said associated routers in each router set comprise a primary router and a secondary router, and said primary router is normally selected and operational to provide said communication route, and if said primary router becomes trouble or inoperational, then said secondary router is alternatively selected and operational to provide said communication route (Srikanth col. 2 line 57 – col. 3 line 11).

19. In regards to claims 24, 29, and 34, Sauer et al. and Srikanth disclose the inventions of claims 22, 27, and 32 wherein selection to one of said associated routers in each router set is made by a selected higher level router which manages said associated routers (Srikanth paragraph 6).

20. In regards to claims 25, 30, and 35, Sauer et al. and Srikanth disclose the inventions of claims 24, 29, and 34 wherein originally selected one of said associated routers in each router set sends said selected higher level router a message indicating that said originally selected one of said associated routers is operational, and if said selected higher level router has not received said message from said originally selected one of said associated routers in a predetermined time period, then said selected higher level router judges that said originally selected one of said associated routers has become inoperational, and said selected higher level router selects other of said associated routers to provide the same communication route alternative to said originally selected one of said associated routers. These “keep-alive” messages are disclosed by Srikanth in paragraph 6. The use of “keep-alive” messages is also well known in the art, particularly in use with TCP/IP.



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21. In regards to claims 26, 31, and 36, Sauer et al. and Srikanth disclose the inventions of claims 22, 27, and 32 wherein all of said associated routers update the same routing information themselves based on a position recording message of said at least mobile host which has been transferred through a selected lower level router which is managed by selected one of said associated routers, and said selected one of said associated routers further transfers said position recording message to all of higher level associated routers which are capable of managing said associated routers (Sauer et al. page 8 lines 12-13).

22. Claims 37-43, 50-57, 64-71, 78-85, and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485) in view of Eklund et al. (WO 00/54475, provided by the applicant).

23. In regards to claims 37, 51, 65 and 79, Sauer et al. discloses a communication network comprising: a host network; a plurality of base stations; at least a mobile host capable of establishing links to said base stations; and a hierarchy-network of plural router-sets providing multiple point routings between said base stations and said host network (Figure 5). Sauer et al. does not disclose wherein said hierarchy-network of plural routers establishes not only a currently designated communication route between said host network and a first base station which has currently been linked to said mobile host but also a currently undesignated adjacent communication route between said host network and a second base station adjacent to said first base station, and said second base station has currently been unlinked to said mobile host, and wherein said hierarchy-network of plural routers transfers a packet not only through said

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currently designated communication route to said first base station but also through said currently undesignated adjacent communication route to said second base station.

Eklund et al. discloses a handoff technique in figure 4.

It would have been obvious to one of ordinary skill in the art to use soft-handoff, as taught by Eklund et al. in the communication system of Sauer et al. because Eklund et al.'s handoff method is more efficient, as taught in page 5 lines 16-25.

24. In regards to claims 38, 52, 66, and 80, Sauer et al. and Eklund et al. disclose the inventions of claims 37, 51, 65, and 79 wherein a router positioned at a branch point of both said currently designated communication route and said currently undesignated adjacent communication route is selected to perform as a multicast router (figure 4).

25. In regards to claims 39, 53, 67, and 81, Sauer et al. and Eklund et al. disclose the inventions of claims 38, 52, 66, and 80 wherein said selection of said multicast router is made by a retrieval to said branch point based on a position recording message from said mobile host and a last-updated routing information stored on a routing table of each of said routers, wherein said routing information is updated based on said position recording message from said mobile host (Eklund et al. page 7 lines 4-16).

26. In regards to claims 40, 54, 68, and 82, Sauer et al. and Eklund et al. disclose the inventions of claims 39, 53, 67, and 81 wherein said retrieval to said branch point is made, every when said mobile host moves to an adjacent radio area to said last-existed radio area, based on a new position recording message from said mobile host and a newly-updated routing information (Eklund et al. page 7 lines 4-16).

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27. In regards to claims 41, 55, 69, and 83, Sauer et al. and Eklund et al. disclose the inventions of claims 37, 51, 65, and 79 wherein said router selected as said multicast router has a lowest level in said hierarchy-network of plural routers and is positioned on a currently designated communication route between said host network and said first base station (figure 4).

28. In regards to claims 42, 56, 70, and 84, Sauer et al. and Eklund et al. disclose the inventions of claims 41, 55, 69, and 83 wherein said multicast router transfers said packet to said first base station and also to said second base station through a higher level router which is higher in level of said hierarchy-network of plural routers, provided that said higher level router is positioned at a branch point of both said currently designated communication route between said host network and said first base station and a currently undesigned adjacent communication route between said host network and said second base station (figures 2 and 4).

29. In regards to claims 43, 57, 71, and 85, Sauer et al. and Eklund et al. disclose the inventions of claims 37, 51, 65, and 79 wherein said second base station is selected to be a base station which transmits a most intensive radio wave to said mobile host except for said first base station. Eklund et al. discloses various methods for selecting a second base station in figures 1-10. The second base station relays messages in the form of radio waves to the mobile host.

30. In regards to claims 50, 64, 78, and 92, Sauer et al. and Eklund et al. disclose the inventions of claims 37, 52, 65, and 80 wherein said multicast router is a bicast router. The multicast routers shown in figures 2 and 4-10 are inherently capable of routing information to two endpoints.

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31. Claims 44-49, 58-63, 72-77, and 86-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (WO 00/72485) in view of Eklund et al. (WO 00/54475) further in view of RFC 793.

32. In regards to claims 44, 58, 72, and 86, Sauer et al. and Eklund et al. disclose the inventions of claims 37, 52, 65, and 80, but not wherein said multicast router adds said packet with a label value which indicates a sequence in transmission of said packet before transferring said packet with said label value.

33. RFC 793 discloses adding a sequence label value on page 3.

34. It would have been obvious to one of ordinary skill in the art to add the sequence value disclosed by RFC 793 to the transmission of Sauer et al. and Eklund et al. because the sequence values help to order the received packets correctly and eliminate duplicates, as disclosed by RFC 793 on page 3.

35. In regards to claims 45, 59, 73, and 87, Sauer et al., Eklund et al., and RFC 793 disclose the inventions of claims 44, 58, 72, and 86 wherein lowest level routers at the lowest level of said hierarchy-network of plural routers are capable of queuing said packet (RFC 793 page 9).

36. In regards to claims 46, 60, 74, and 88, Sauer et al., Eklund et al., and RFC 793 disclose the inventions of claims 45, 59, 73, and 87 wherein after said mobile host entered into said adjacent radio area and established a new link to said second base station, then said mobile host sends said second base station said label value which had been last-received from said first base station, and said second base station transfers said label value to said lowest level router, and said lowest level router selects at least one packet from queuing packets by comparing respective label values of said queuing packets with reference to said last label value, and said lowest level

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router sends said selected at least one packet of said packets to said mobile host through said second base station. Page 9 of RFC 793 discloses that the label value of an acknowledge packet is compared to the queued packets. If it matches the packet is assumed to have arrived. If it does not match the packet is resent.

37. In regards to claims 47, 61, 75, and 89, Sauer et al., Eklund et al., and RFC 793 disclose the inventions of claims 44, 58, 72, and 86 wherein said mobile host compares a just-received label value of said packet just received from said second base station to said last-received label value, and if said just-received label value is identical with said last-received label value, then said mobile host discards said packet just received from said second base station. Page 9 of RFC 793 discloses that the label value of an acknowledge packet is compared to the queued packets. If it matches the packet is assumed to have arrived. If it does not match the packet is resent.

38. In regards to claims 48, 62, 76, and 90, Sauer et al. and Eklund et al., and RFC 793 disclose the inventions of claims 44, 58, 72, and 86 wherein said second base station queues said packet (RFC 793 page 9).

39. In regards to claims 49, 63, 77, and 91, Sauer et al., Eklund et al., and RFC 793 disclose the inventions of claims 48, 62, 76, and 90 wherein after said mobile host entered into said adjacent radio area and established a new link to said second base station, then said mobile host sends said second base station said label value which had been last-received from said first base station, and said second base station selects at least one packet from queuing packets by comparing respective label values of said queuing packets with reference to said last label value, and said second base station sends said selected at least one packet to said mobile host. Page 9 of RFC 793 discloses that the label value of an acknowledge packet is compared to the queued

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packets. If it matches the packet is assumed to have arrived. If it does not match the packet is resent.

***Conclusion***


40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All of the cited references except for Hemmady et al. disclose methods and apparatus for preventing and controlling congestion by limiting packet rates. Hemmady et al. discloses a handoff method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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